

XLI.—*Note in reply to Dr. Griffith's Remarks on the Pitted Tissue of Plants, on Muscle, &c.\** By MARTIN BARRY, M.D., F.R.SS. L. & E.

I HAVE to acknowledge the courtesy shown in the remarks of Dr. Griffith, and regret that his opinions differ so widely from my own; but am compelled to say, I find nothing in his communication that alters in any particular my views, or that requires more than *general* notice at my hands.

“The appearances observed by Dr. Barry in the blood,” which Dr. Griffith thinks were “misinterpreted,” I cannot suppose that Dr. Griffith ever *saw*; if I may judge from the description he has given. That they are however visible, is proved by the following description given by another, who did see the appearances in question. Whether they have been “misinterpreted,” the future may determine.

“Bristol, August 19, 1842.

“Dr. Barry has pointed out to me, among the corpuscles of newt's blood, preserved in their own serum, without any reagent having been applied to them, many which had the form of a flask with a projecting neck, or which might be still better compared to the body of a pair of bellows with its projecting nozzle. The projecting portion appeared to be a filament, having a much higher refracting power than the general substance of the corpuscle. He also showed me, in a portion of blood to which corrosive sublimate had been added, a corpuscle which was evidently destitute of the ordinary nucleus; and which contained what appeared to be a filament which presented transverse markings that resembled those of muscular fibrillæ, the interspaces being oblique. The appearance resembled that of Dr. Barry's fig. 9  $\beta$ . [Phil. Trans. 1842, plate 5.], except that there was no trace of nucleus.

(Signed)

“W. B. CARPENTER.”

My preparations of muscle have been seen by many, to whom I could refer for their opinions regarding them. Among our own countrymen may be mentioned Robert Brown, D.C.L., and Professors Owen and Sharpey, besides the gentlemen from whom I have received the testimonials at foot. To the kindness of Professor Sharpey I am indebted for the beautiful preparation of muscle from the tail of the tadpole mentioned by Dr. Griffith. The following note was sent me by one who had closely examined that preparation.

“6 Holles Street, Cavendish Square, Oct. 13, 1842.

“MY DEAR SIR,—On returning home today after seeing your exquisite preparations of muscular tissue, I was anxious to express my thanks for your kindness and patience in exhibiting the series to me. I went to your house by no means prepared to admit the existence of

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the spiral fibre ; on the contrary, somewhat prepossessed against such a theory ; for while I had already made up my mind as to the non-existence of the discs advocated in Mr. Bowman's very ingenious paper in the 'Philos. Trans.,' I had not been able to bring my belief to the idea of substituting a spiral thread or fibre to account for the peculiar markings on the muscular fasciculi. You have, however, convinced me, for in several instances I was enabled to follow the spiral thread *round* its axis, and to see the continuity of *both* sides of the chain. In one or two instances I observed it drawn out or separated so far as not to leave a doubt of its reality. In the same way I distinctly recognised the double spiral (especially in one preparation where the two spirals had not an equal obliquity), and I can conceive that the longitudinal lines or fibrillated appearance of the larger fasciculi depends upon the even juxtaposition of many minute spirals.

"The reason, probably, I had failed in previously making out this structure, resulted from my expectation of seeing this appearance throughout the whole length of a filament ; but I now observe how minute is the care necessary to separate parts, and how small often is the portion favourably situated or sufficiently isolated to admit of a distinct view of this curious structure.

"There are also many circumstances connected with the different refrangibility of objects of great importance in explaining why a spiral fibre should be so much more easily seen in one tissue than another ; and thus it is that reagents are often most usefully applied where different parts of the same object refract the light nearly equally. I *think*, through your help, I have at last settled my belief as to the true character of the markings of muscle, and for which I beg you to accept the thanks of

"Yours faithfully,

(Signed)

"JOHN DALRYMPLE."

"To Martin Barry, M.D."

The following, connected with the same subject, was received from Dr. Carpenter, bearing the same date as his testimonial above given.

"I have this day had the opportunity, through Dr. Barry's kindness, of examining several of his preparations of muscular fibre, especially those from the heart of the turtle and from the shrimp. I have *distinctly seen* single spiral threads continuous with fasciculi ; in one or two instances so little elongated as to resemble a corkscrew ; in others drawn out more or less straightly. In several fibrillæ, which had been isolated without disturbance of their structure, I have seen appearances closely corresponding with those represented by Dr. Barry in figs. 52 and 56 of his last paper [Phil. Trans. 1842]. I may add, that I have seen these appearances even more distinctly under my own microscope, which is furnished with one of Powell's *latest* 1-16th objectives, than under Dr. Barry's instrument, in which lower powers were used.

(Signed)

"WILLIAM B. CARPENTER."

The microscope I use is one of Schiek's achromatics, si-

milar to those employed by Professors Ehrenberg, Schwann, and R. Wagner. On this subject I cannot refer to a higher authority than that of Joseph Jackson Lister, who, after a close examination, describes my deeper object-glasses as "very finely corrected every way."

XLII.—On a new British Starfish of the genus *Goniaster*.  
By Prof. EDWARD FORBES, V.P.W.S., F.L.S., F.B.S. &c.

[With a Plate.]

THE very splendid addition to the catalogue of British Starfishes, the only one found since the publication of my work on those animals, which I am about to describe, was discovered by an active naturalist, Mr. Robert Maclaurin of Coldingham, who exhibited it to the Berwickshire Naturalists' Club at their meeting held December 21, 1842, where he pointed it out as distinct from any recorded British species. It was found between St. Abb's Head and the Isle of May, and was brought up on the lines of the fishermen from a depth of about 30 fathoms.

It belongs to the same group of *Goniasters* with the *G. equestris*, to which species it is nearly allied, but differs remarkably in form from any species of the genus. The arrangement and form of the granulations, tubercles, marginal plates, and those remarkable bodies to which I have in the description applied the name of stomata, further distinguish it from its immediate ally.

Sp. Ch. *Goniaster abbensis*. G. corpore planiusculo, orbiculari, angulis in brachiis productis, infra et supra tuberculis, granulis stomatibusque vestito.

*Description*.—*Upper surface*.—Disc round, interrupted by the bases of five short arms, each of which is as long as a third of the breadth of the disc. Surface plane, thickly covered by granules, among which are irregularly interspersed numerous mammilliform tubercles (transformed spines), and at intervals spinules in pairs forming stomata (transformed pedicellariæ?) of an ovate form. No appearance of an anal pore. Madreporiform tubercle nearer the margin than centre, large, rugose. Upper surface of arms (which are prolongations of the angles of disc) similarly covered with the centre.

*Margin* bordered by a double series of irregularly quadrate plates, somewhat arched at their free borders, and each edged by a single row of minute square granules. The upper series bear from one to four mammiform tubercles: when more than